

SPEEDICT TECHNOLOGY

world's
first electric bike
computer come
with data logging
and live view via
cell phone !



SMALLEST IN ITS OWN CLASS ...

A break through technology that display real live information through Bluetooth enabled cell-phone

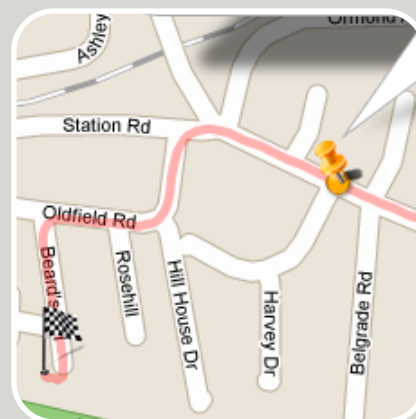
INTRODUCTION THANK YOU FOR PURCHASING THE EBIKE, WORLD'S FIRST ELECTRIC BIKE COMPUTER THAT CAN STREAM MEASURED AND CALCULATED ELECTRICAL PARAMETERS RIGHT TO YOUR CELL-PHONE¹. BY ELIMINATING AWKWARD WIRES AND BULKY DISPLAY PANEL, EBIKE IS THE SMALLEST AND LIGHTEST IN ITS CLASS.

WHEN WITHIN RANGE², BIKER CAN INSTANTLY GET THE CRITICAL ELECTRICAL PARAMETERS HASSLE FREE USING THEIR BLUETOOTH ENABLED JAVA CELL-PHONE, WHEN GPS BUILT-IN ANDROID SMART PHONE³ IS CONNECTED, LOCATION INFORMATION IS ALSO BE RECORDED.

1. SUPPORT STANDARD JAVA MIDP 2.0 OR BELOW, AND BLUETOOTH ACCESS VIA BTAPI

2. DEPENDED ON CELL-PHONE MODEL (AS TESTED WITH MOTOROLA SLVR L7, THE RANGE IS UP TO 80M)

3. ANDROID SMART PHONE WITH GPS



FUNCTIONS THE EBIKE MEASURES AND RECORDS SPEED, CURRENT, VOLTAGE AND TEMPERATURE OVER TIME, THEN USE THESE MEASUREMENTS TO CALCULATE THE MAXIMUM POWER (WATT), BATTERY CONSUMPTION (MAH). REAL-TIME INFORMATION AS TO LIVE AND PEAK CURRENT, LIVE AND USED VOLTAGE, CURRENT AND MAXIMUM POWER (WATT), AS WELL AS EXISTING AND CONSUMED CAPACITY (MAH) IS TRANSMITTING USING BLUETOOTH TECHNOLOGY. BIKER CAN USE THEIR CELL-PHONE TO READ THESE DATA IN REAL-TIME FOR THEIR PLEASURE OR TO FINE-TUNE THEIR POWER SYSTEM.

THE EBIKE CAN SAVE UP TO 12 HOURS OF INFORMATION. BIKERS CAN DOWNLOAD THEIR LOGGED DATA TO THEIR COMPUTER USING A USB CABLE AND MANAGE THE DATA AND PERFORMANCE CHARTS WITH THE INCLUDED PC SOFTWARE, OR UPLOAD TO THE INTERNET FOR STORE, REVIEW AND SHARE PURPOSE.

THE EBIKE CAN BE USED IN DIFFERENCE WAYS TO ENHANCE YOUR ELECTRIC-POWERED BIKE EXPERIENCE AS FOLLOW :

- TRIP INFORMATION RECORDER,
- CHARGER AND BATTERY HEALTH MONITOR,
- SYSTEM DIAGNOSTIC AND OPTIMIZATION EQUIPMENT.



BENEFITS

THE EBIKE PROVIDES CRITICAL INFORMATION IN A REVOLUTIONARY WAY TO GIVE E-BIKER A NEW WAY TO FINE-TUNE THE PERFORMANCE OF THEIR ELECTRICAL POWERED BIKE FOR THINGS SUCH AS :

- MAXIMIZE TRIP TIME
- MAXIMIZE TRIP DISTANCE
- CONTROLLER AND MOTOR EFFICIENCIES THROUGH KNOWLEDGE OF CURRENT FLOW THROUGH CONTROLLER AND MOTOR
- IMPROVE BATTERY LIFE BY MONITORING BATTERY HEALTH, CHARGER PERFORMANCE AND CURRENT PUT THROUGH, AND DISCHARGE FROM A BATTERY
- ELIMINATE POTENTIAL RISK OF DAMAGING COMPONENTS WITH PEAK CURRENT
- REDUCE VOLTAGE SAGS THAT CAUSE COMPONENTS TO OPERATE OUT OF SPECIFICATION
- FEEDBACK AS TO WHY POWER IS LOST DURING DIFFERENT TRIP CONDITIONS
- EFFECTS OF MODIFICATIONS, AGING, AND DAMAGE ON MANY ELECTRICAL SYSTEM COMPONENTS

FEATURES

- MEASURES AND RECORDS CURRENT, VOLTAGE, SPEED AND TEMPERATURE OVER TIME
- REAL-TIME CALCULATIONS OF THE MAXIMUM POWER (WATT) AND CAPACITY USED (MAH)
- DISPLAYS REAL-TIME INFORMATION ON JAVA ENABLED CELL-PHONE OR ANDROID POWERED SMART-PHONE STREAMED VIA BLUETOOTH
- MASSIVE BUILT-IN MEMORY ENABLES CONTINUOUS LIVE DATA RECORDING FOR UP TO 12 HOURS
- COMPUTER MANAGEMENT OF LOGGED DATA, PERFORMANCE CHARTS AND GPS MAP ROUTE INFORMATION USING A USB CABLE AND THE INCLUDED PC SUITE SOFTWARE
- BUILT-IN BLUETOOTH AND USB SUPPORT, NO ADDITIONAL HARDWARE IS NEEDED
- FUTURE PROOF USER FIRMWARE UPGRADABLE
- ACCURATE & PRECISE - 0.01 A CURRENT, 0.01 V VOLTAGE AND 0.1 KM/H OR MPH RESOLUTIONS
- DURABLE - HANDLES +/- 100 A PEAK AT 80 V
- SMALLEST AND LIGHTEST IN ITS CLASS, FITS RIGHT INTO YOUR BATTERY COMPARTMENT
- PRECISION AND LOW RESISTANT (.00025 OHMS) CIRCUITRY THAT DOESN'T AFFECT ELECTRIC BIKE'S PERFORMANCE
- POWERFUL 8 MIPS MICRO-CONTROLLER



- FACTORY CALIBRATION STORES CONSTANTS IN EEPROM TO COMPENSATE FOR COMPONENT TOLERANCES
- COMES WITH ONE-YEAR LIMITED WARRANTY

SPECIFICATIONS ELECTRICAL MEASUREMENT RANGES

PARAMETER	RANGE	RESOLUTION
VOLTAGE	6-80 V	0.01 V
CURRENT	± 1-100 A	0.01 A
POWER	0-65535 W	1 W
CAPACITY	0-65535 MAH	1 MAH
SPEED	0-99.9 KM/H / MPH	0.1 KM/H / MPH
ODOMETER	0-999999 KM	1 KM
TRIP DISTANCE	0-9999 KM	1 KM
TRIP TIME	0-99 HOURS	1 SECOND
TRIP CAPACITY	0-65535 MAH	1 MAH
TEMPERATURE	0-100 °C / °F	1 °C / °F

MISCELLANEOUS SPECIFICATIONS

PARAMETER	DATA / FORMAT
INTERNAL MEMORY	8 MBIT / 1 MBYTE
LOG / RECORD TIME	12 HOURS
SPEED MEASUREMENT PERIOD	INSTANT
MEASUREMENT UPDATE PERIOD	340 MS
IN CIRCUIT RESISTANCE	0.00025 OHM
OPERATION CURRENT	60 mA (WITH BLUETOOTH)
DIMENSIONS	45 x 29 x 11 MM
WEIGHT	13 G / 23.4 G (INCLUDING WIRES)
NOMINAL OPERATION CONDITIONS	0 - 50 AMBIENT TEMPERATURE
BLUETOOTH OPERATION RANGE	UP TO 80 M (DEPENDS ON CELL PHONE)

BLUETOOTH SPECIFICATIONS

FEATURE

IMPLEMENTATION

BLUETOOTH TRANSMISSION

CLASS 2

FULLY BLUETOOTH QUALIFIED

V2.0 + EDR

OPERATING RANGE

UP TO 80 M (FREE SPACE)
(DEPENDS ON CELL-PHONE)

FREQUENCY

2.4 ~ 2.5 GHZ

MAX / MIN TRANSMIT POWER

+6 / -25 DBM

RECEIVE SENSITIVITY

BETTER THAN -86DB @ 25°C

TEMPERATURE RANGE

NORMAL OPERATION : -40°C TO +85°C

SAFETY PRECAUTIONS

ELECTRIC-POWERED BIKE THAT USE HIGH POWER ELECTRICAL SYSTEMS MAY POSE DANGERS INDEPENDENT OF ADDING EBIKE TO THE SYSTEM AND IT IS THE USER'S RESPONSIBILITY TO BE FAMILIAR WITH THESE DANGERS AND TAKE ANY NECESSARY ACTION TO ENSURE SAFE USE. IMPROPER USE OF EQUIPMENT WHILST USING EBIKE MAY SHORT CIRCUIT A RECHARGEABLE BATTERY OR BATTERY CHARGER THAT CAN SUPPLY HUGE CURRENTS AND RISK SERIOUS CONSEQUENCES INCLUDING EXPLOSIONS, CAUSING FIRE, DAMAGE TO EQUIPMENT AND PERSONAL INJURY.



LIMITATION OF YOUR EQUIPMENT

EBIKE IS DESIGNED TO OPERATE WITHIN THE PARAMETER LIMITS AS NOTED IN THE PRODUCT SPECIFICATION. USE OF EBIKE IN SYSTEMS EXCEEDING THE SAFETY LIMIT OF 80 VOLTS, CARRYING INTERMITTENT CURRENTS OVER 100 AMP MAY DAMAGE THE EQUIPMENT AND POSSIBLE PERSONAL INJURY.

NOTE : TESTED CONTINUOUS 90 A OVER 3 MINUTES WITHOUT VENTILATION CAN CAUSE EBIKE TEMPERATURE EXCEED 100°C

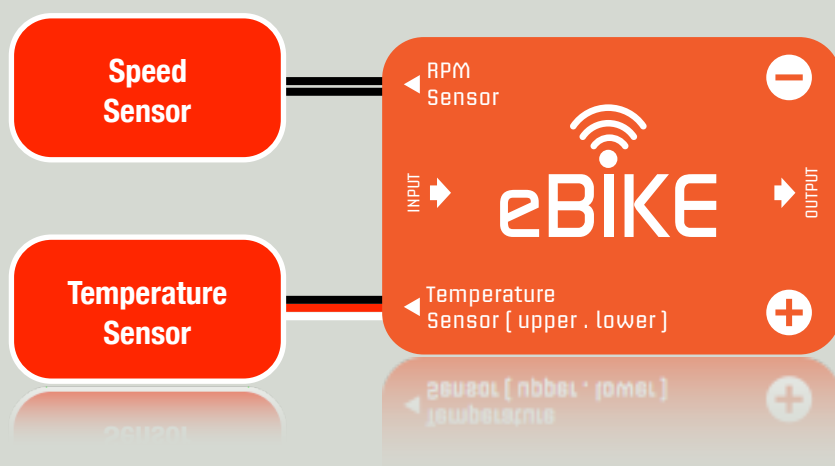
OPERATION INSTRUCTION - HARDWARE CONNECTION

THE EBIKE IS SUPPLIED WITHOUT CONNECTORS. YOU CAN USE WHATEVER CONNECTOR TYPE BEST SUITS YOUR EQUIPMENT. PLEASE MAKE SURE THAT THE EBIKE IS CONNECTED TO THE RIGHT POLARITY AS IT LABELED ON DEVICE, INCORRECT POLARITY CONNECT CAN DAMAGE YOUR DEVICE WITHOUT WARRANTY COVER. THE EBIKE CAN BE USE IN DIFFERENCE WAYS AND CONNECTIONS TO YOUR POWER SYSTEM DEPENDS ON HOW IS USE FOR.

PLEASE REFER TO THE FOLLOWING DIAGRAM FOR HARDWARE CONNECTION:



CONNECT SPEED SENSOR TO THE EBIKE'S SENSOR PORT FOR ACCURATE DISTANCE AND SPEED MEASUREMENTS, CONNECT TEMPERATURE SENSOR TO UPPER OR LOWER TEMPERATURE SENSOR PORT WITH CORRECT POLARITY AS BELOW.



EBIKE MOBILE CLIENT (JAVA)

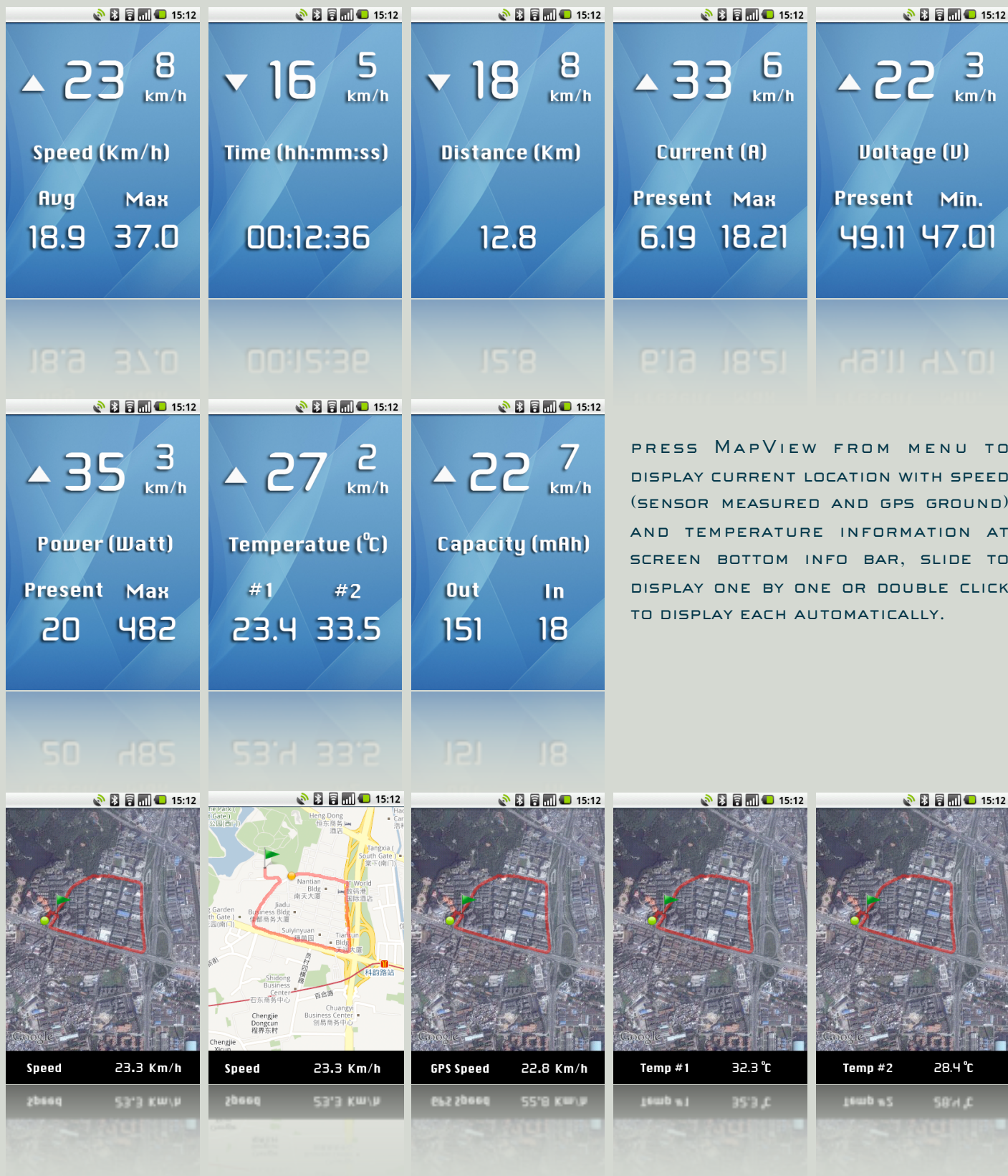
EBIKE PROVIDES REAL TIME DATA STREAMING INTO ANY BLUETOOTH EQUIPPED JAVA CELL-PHONE. DOWNLOAD AND COPY THE SOFTWARE TO YOUR CELL-PHONE VIA EITHER BLUETOOTH OR DATA CABLE AS A NORMAL JAVA GAME AND INSTALL ACCORDINGLY. SINCE INSTALLATION METHODS FOR JAVA APPLETS VARY FROM BRAND TO BRAND, THEY MAY DISPLAY ENTIRE DIFFERENT DIALOG; E.G. NOKIA PHONES ALLOW COPIED JAVA PROGRAM TO RUN DIRECTLY WHILE SONY ERICSSON PHONES REQUIRE YOU TO INSTALL COPIED JAVA PROGRAM TO ANOTHER FOLDER! THE FOLLOWING EXAMPLE IS BASED ON A SONY ERICSSON K770I MODEL.

1. DOWNLOAD EBIKE MOBILE CLIENT FROM SPEEDICT.COM
2. TURN ON YOUR CELL PHONE'S BLUETOOTH
3. RUN (SOME CELL-PHONES NEED INSTALLATION FIRST) THE EBIKE MOBILE CLIENT FROM THE LOCATION WHERE IT IS SAVED
4. PRESS THE SEARCH BUTTON ON THE EBIKE MOBILE CLIENT'S MENU AND START SEARCHING FOR AVAILABLE BLUETOOTH DEVICE(S)
5. PRESS OK OR YES WHEN THE "ALLOW APPLICATION TO CREATE CLIENT BLUETOOTH CONNECTION" DIALOG BOX APPEAR
6. PRESS OK OR YES WHEN THE "EBIKE ADD TO MY DEVICES ? " DIALOG BOX APPEARS
7. WHEN ASK FOR PASSCODE, ENTER 00000 WHICH IS DEFAULT PASSCODE AND CAN BE CHANGED VIA EBIKE PC CLIENT LATER
8. EBIKE IMMEDIATE DISPLAY CURRENT, AVERAGE AND MAXIMUM SPEED VALUE
9. PRESS NUMBER 0 TO 7 FROM KEYPAD FOR DIFFERENT VIEWS OR FEATURES
10. PRESS NUMBER 8 FROM THE KEYPAD TO CREATE A NEW SESSION THAT ALSO WRAPS UP CURRENT RECORDING SESSION. I.E. MEASURING POWER OF DIFFERENT START STYLE OR POWER ASSIST LEVEL ...
11. PRESS EXIT FROM CLIENT MENU TO EXIT PROGRAM AT ANY TIME



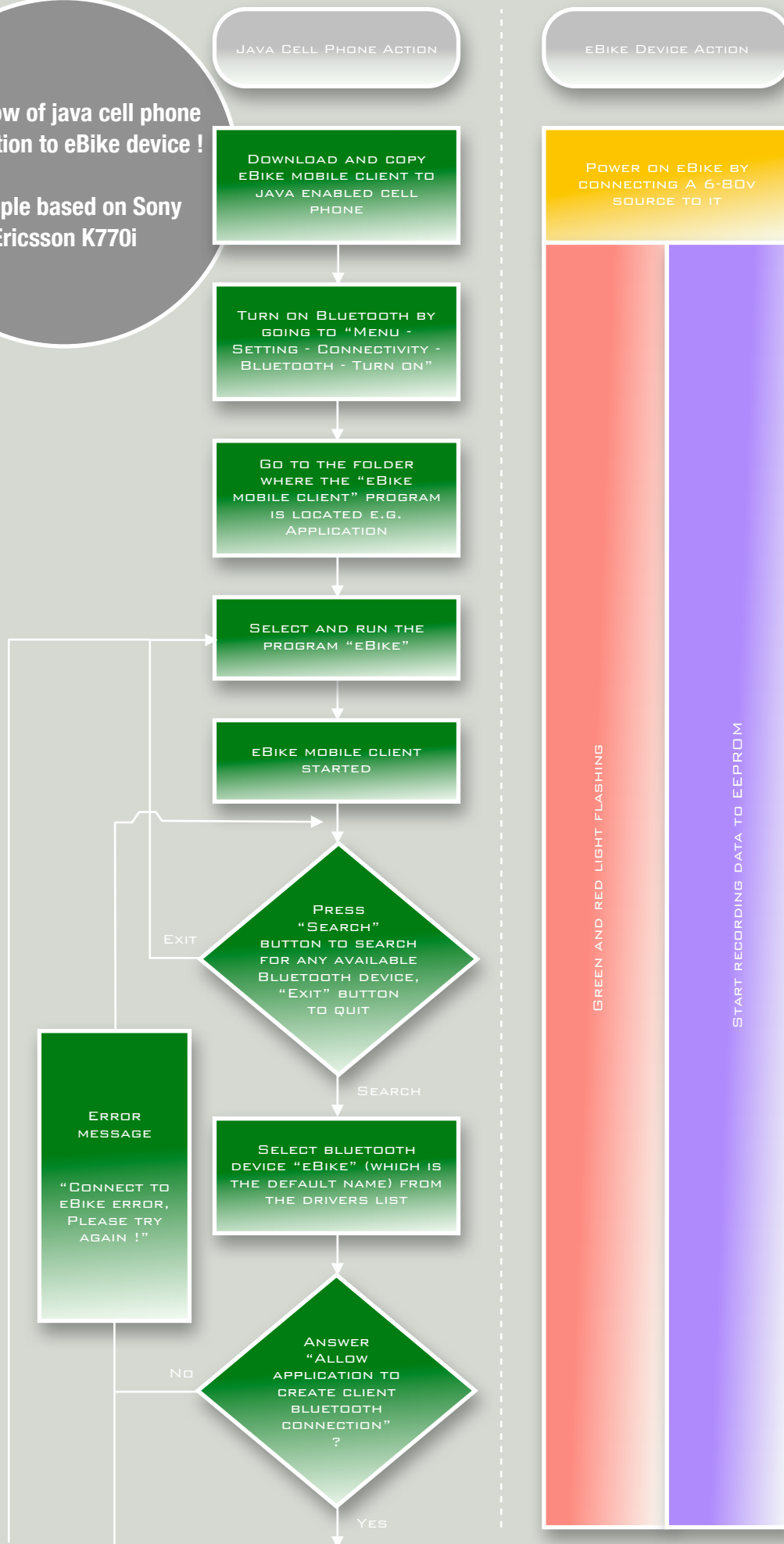
EBIKE MOBILE CLIENT (ANDROID)

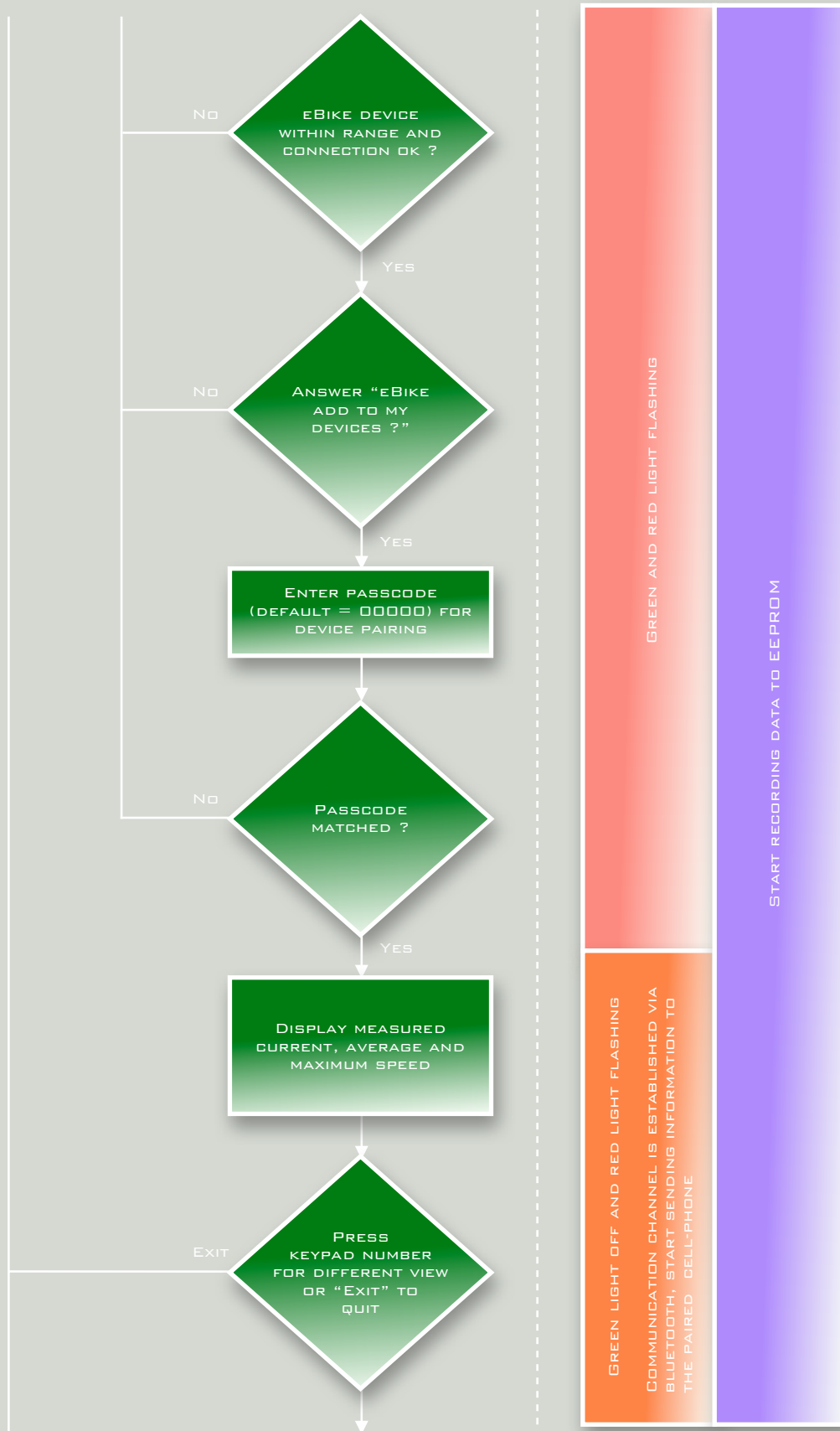
IN ADDITION TO JAVA CELL PHONE, ANDROID PROVIDES GPS LOCATION SERVICE ENABLE EBIKE MOBILE CLIENT TO EXTRACT GPS INFORMATION DISPLAY ON SCREEN TOGETHER WITH CAPTURED DATA AND STORE INTO EBIKE INTERNAL MEMORY... DOWNLOAD EBIKE MOBILE CLIENT FROM ANDROID MARKET, INSTALL AND CONNECT TO EBIKE. WHEN CONNECTED, ITS SPEED INFORMATION WILL BE DISPLAYED, SLIDE ON SMART PHONE'S SCREEN FOR NEXT AVAILABLE INFORMATION SUCH AS ELAPSED TIME, OR DOUBLE CLICK ON PHONE'S SCREEN FOR DISPLAY EACH INFORMATION AUTOMATICALLY !

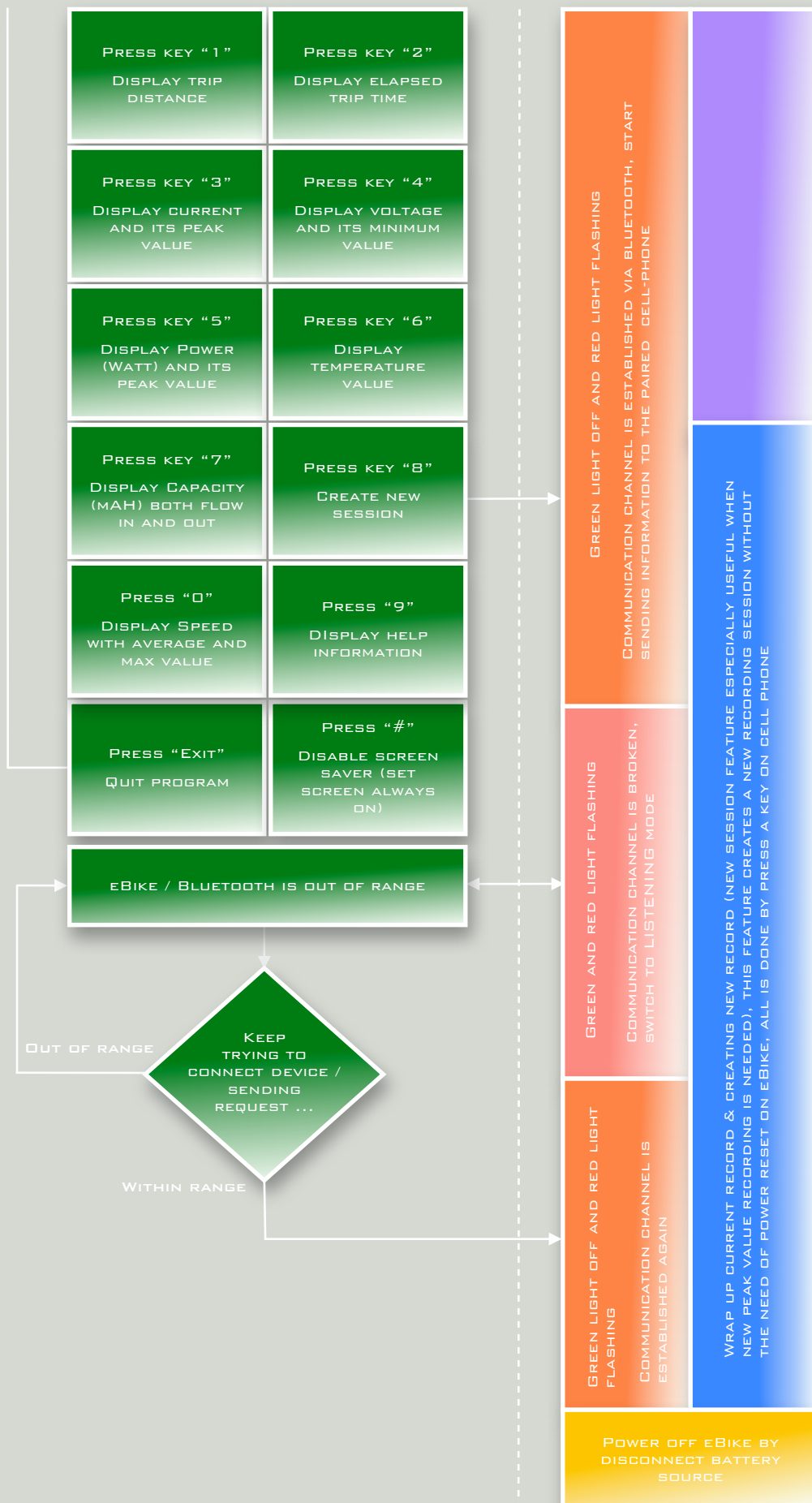


Workflow of java cell phone connection to eBike device !

example based on Sony Ericsson K770i

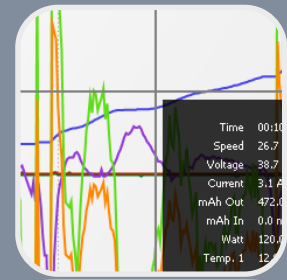




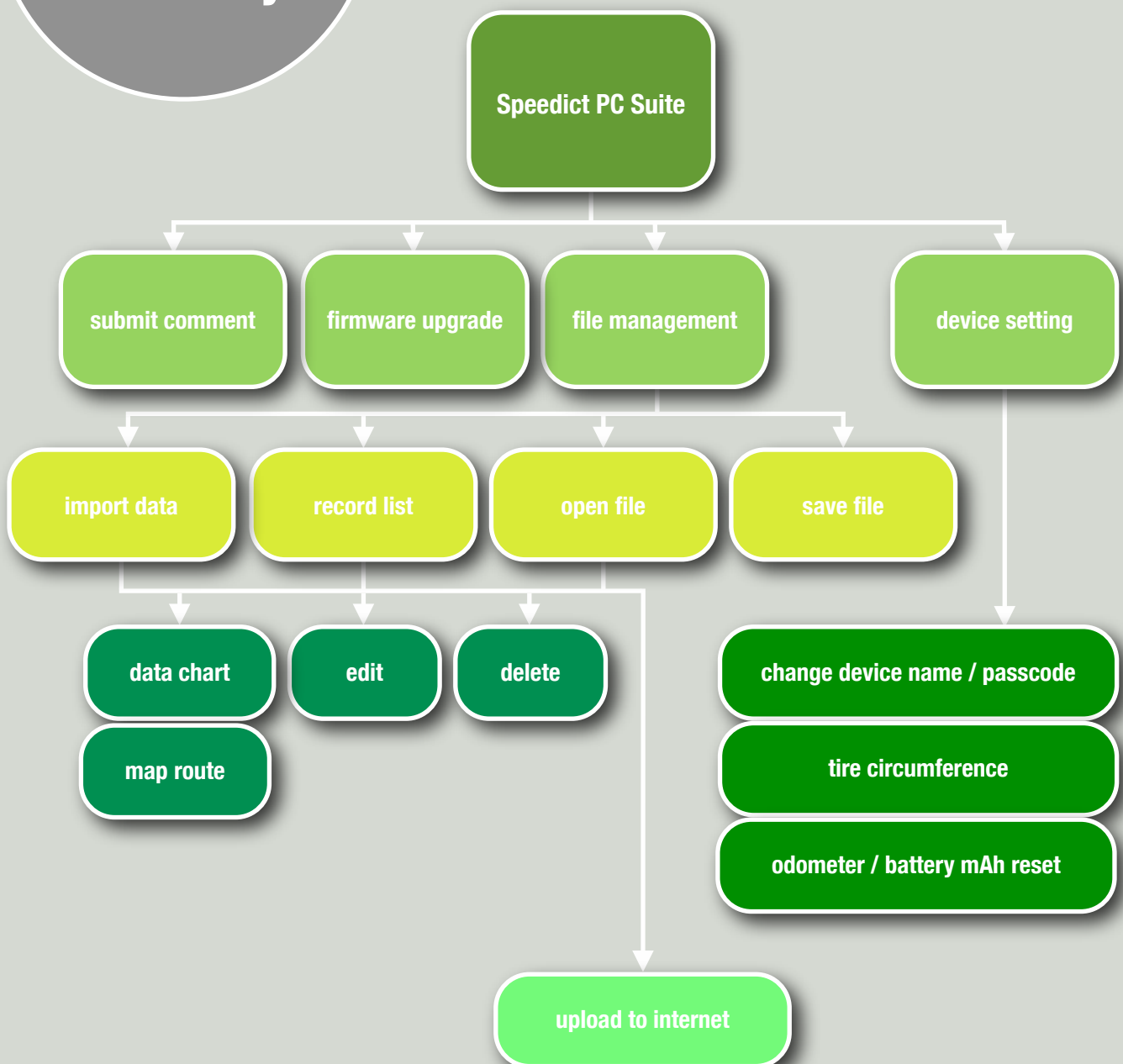


SPEEDICT PC SUITE

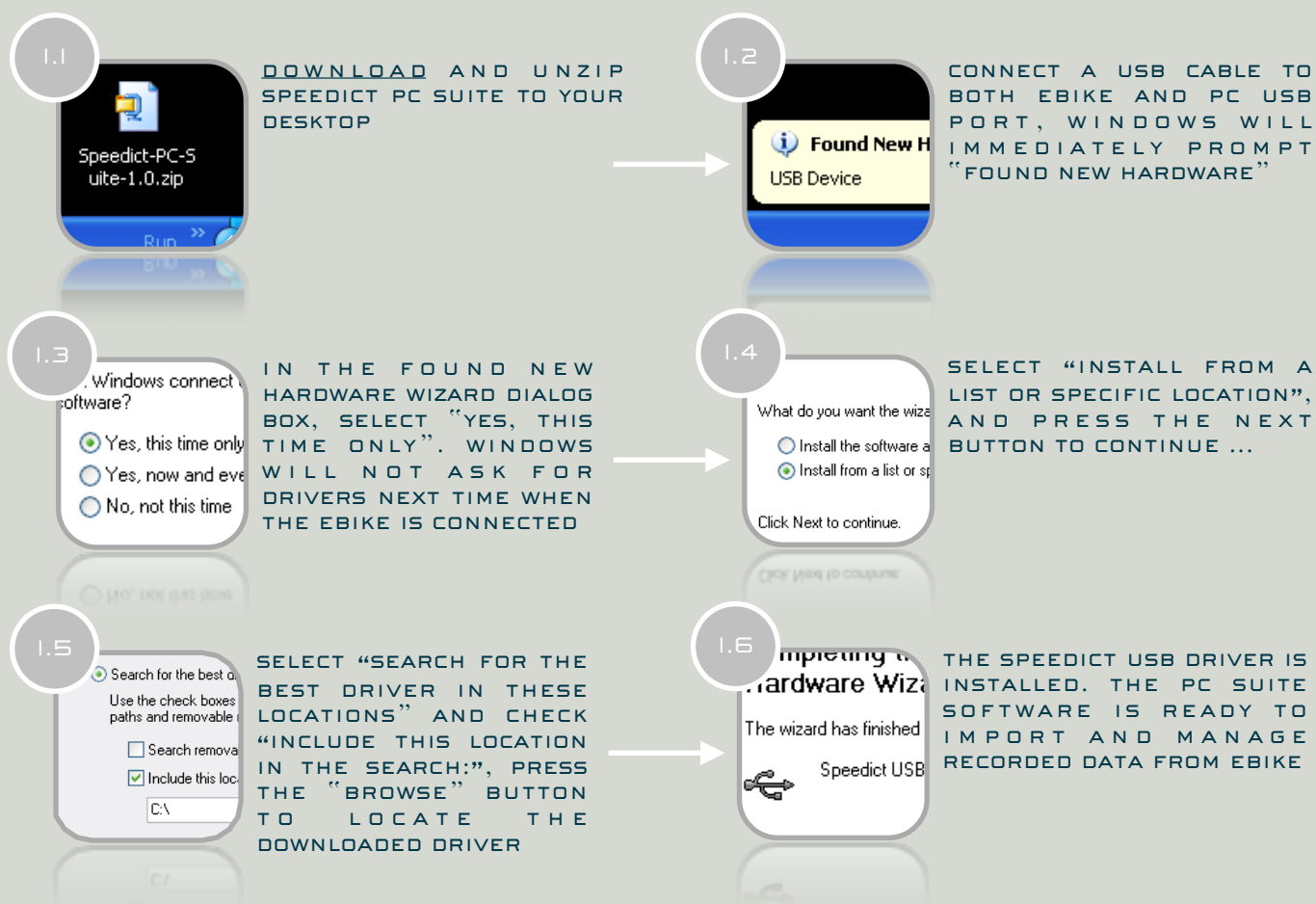
WINDOWS BASED PC SUITE PROVIDES MANAGEMENT FOR LOGGED DATA SUCH AS GRAPH PLOTTING, GPS MAP ROUTE PLOTTING, EDITING, SAVING AND DELETING. DEVICE RELATED SETTINGS LIKE FIRMWARE UPGRADES, TIRE CIRCUMFERENCE, ODOMETER BATTERY RESET, DEVICE NAME AND BLUETOOTH PASSCODE CAN BE CONFIGURED THROUGH THE SINGLE EXECUTABLE PROGRAM WITHOUT INSTALLATION.



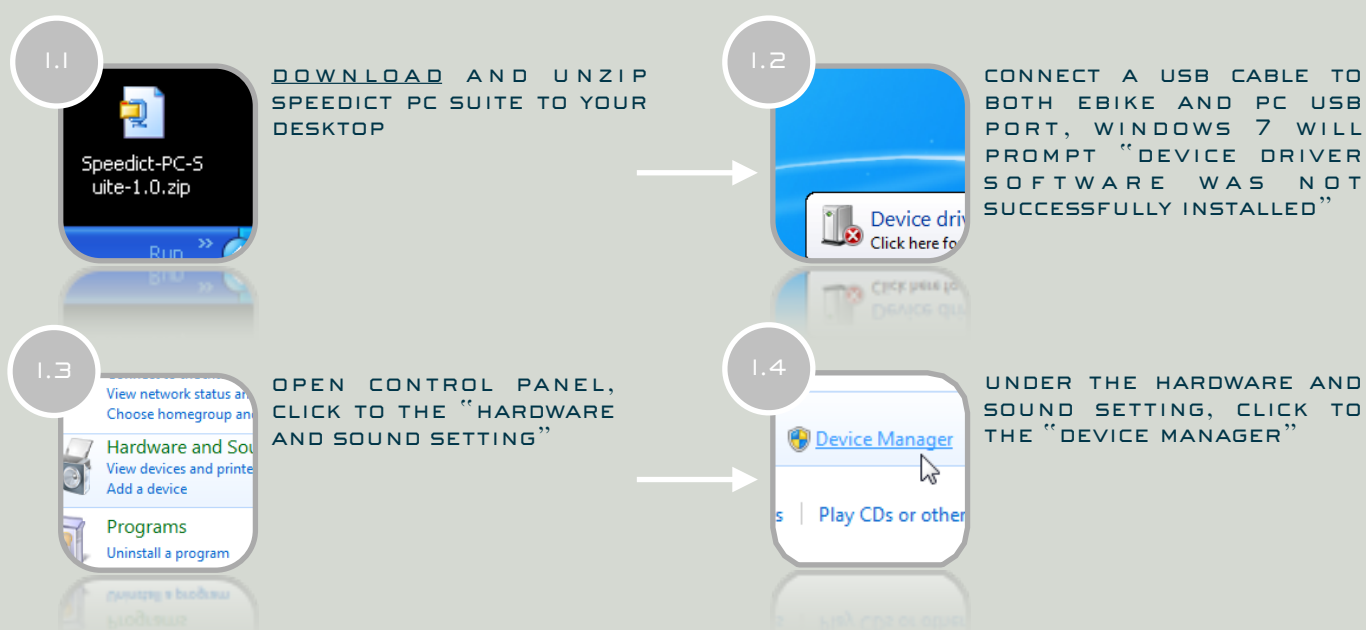
Speedict PC Suite function hierarchy

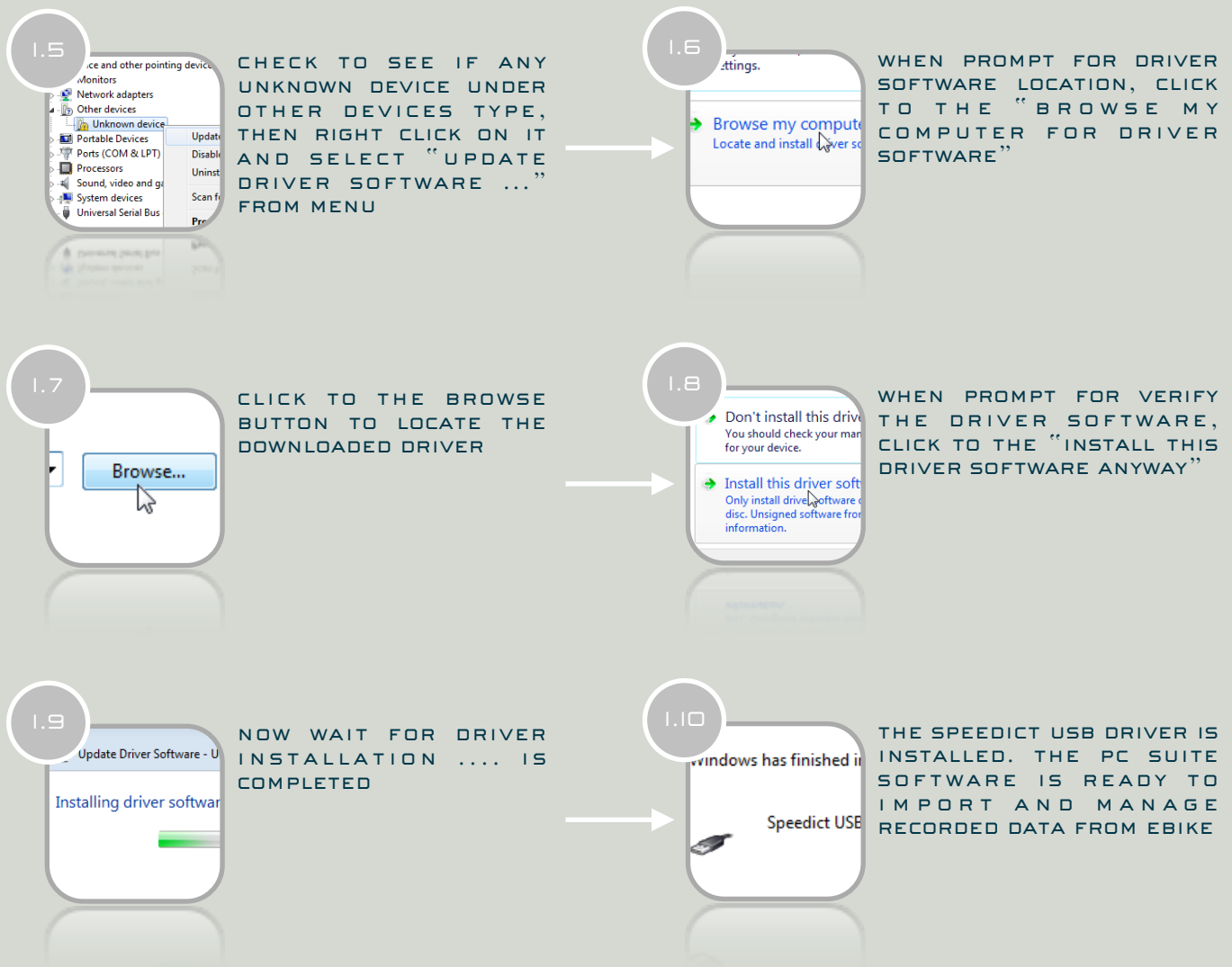


STEP 1. INSTALL SPEEDICT USB DRIVER

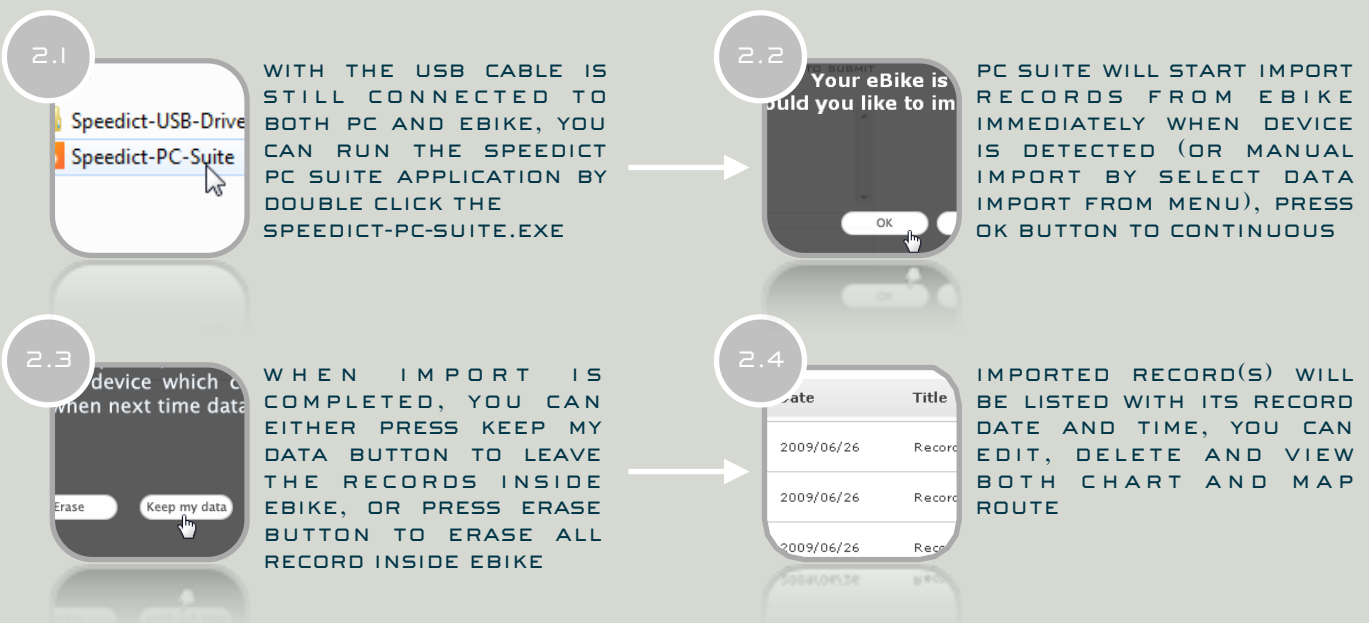


STEP 1. INSTALL SPEEDICT USB DRIVER (WINDOWS 7)

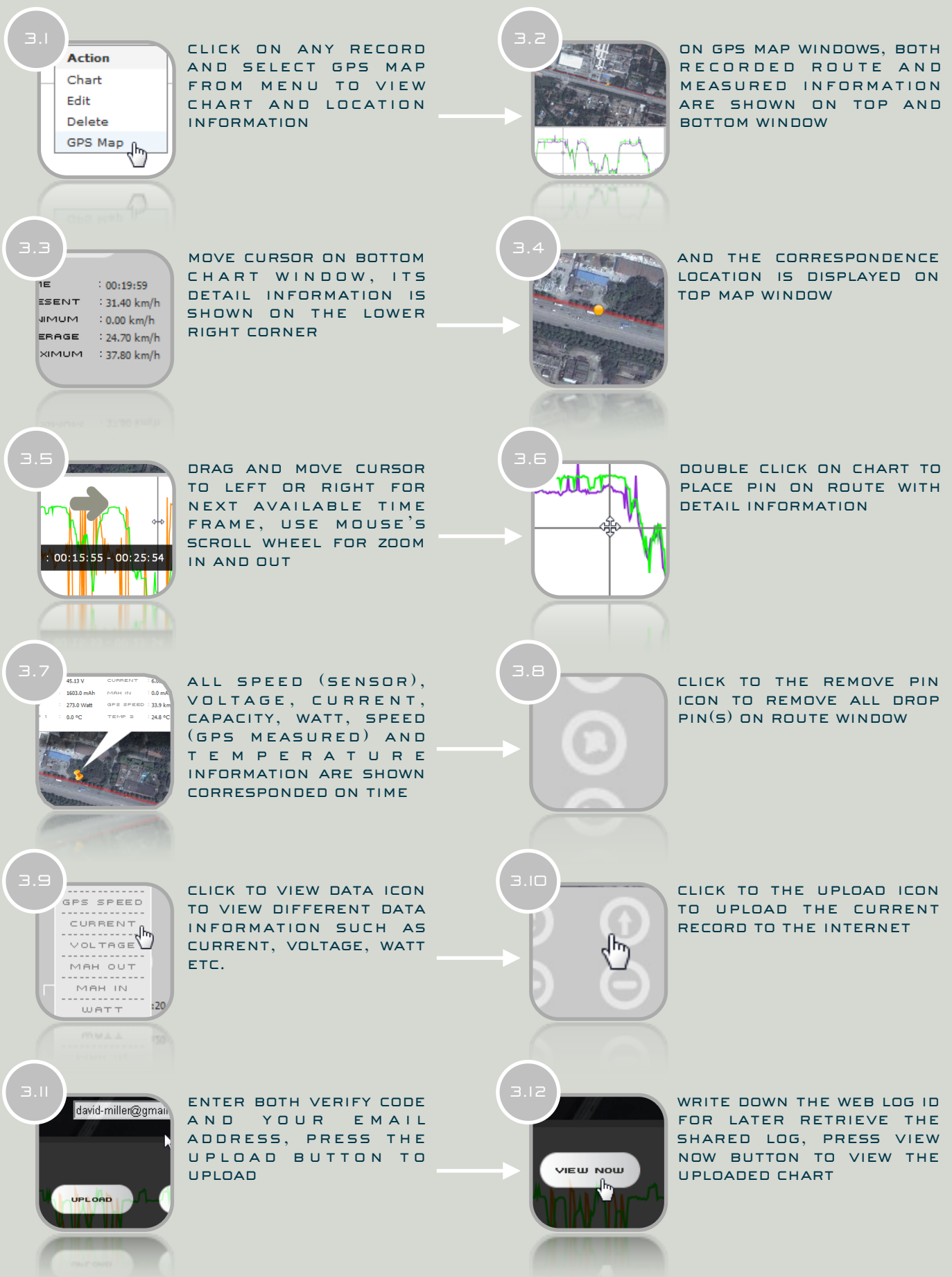




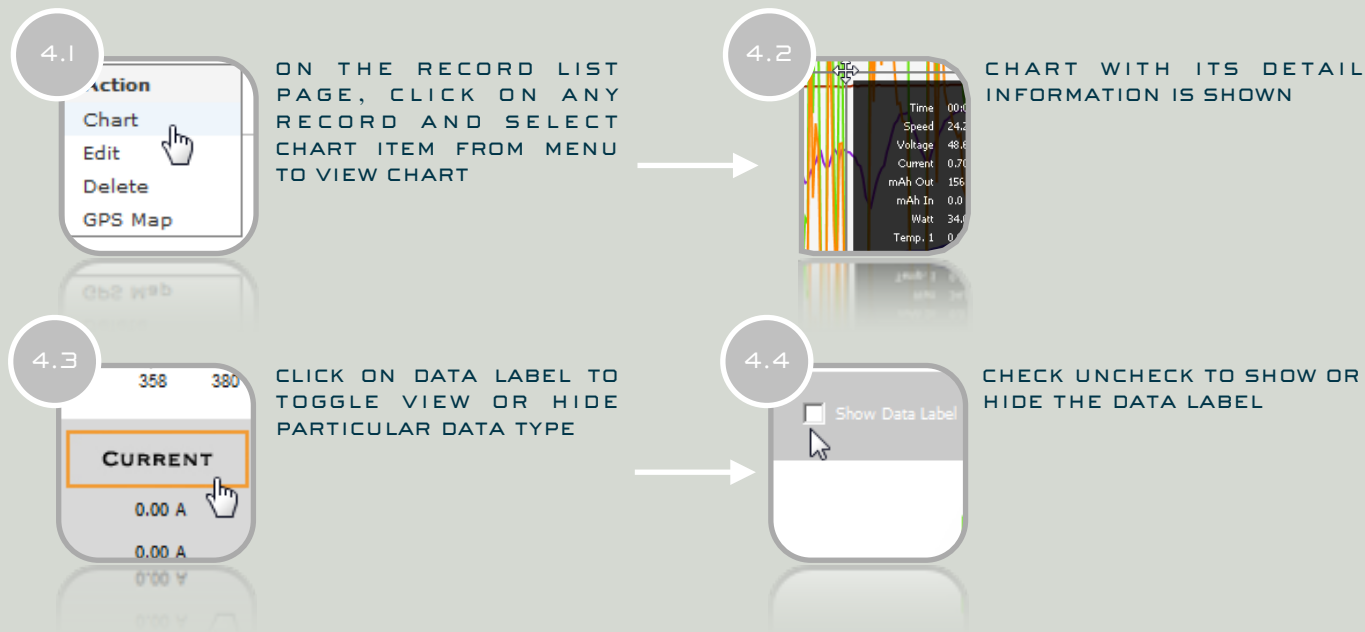
STEP 2. RUN SPEEDICT PC SUITE AND IMPORT YOUR FIRST RECORD



STEP 3. VIEW MAP ROUTE AND CHART



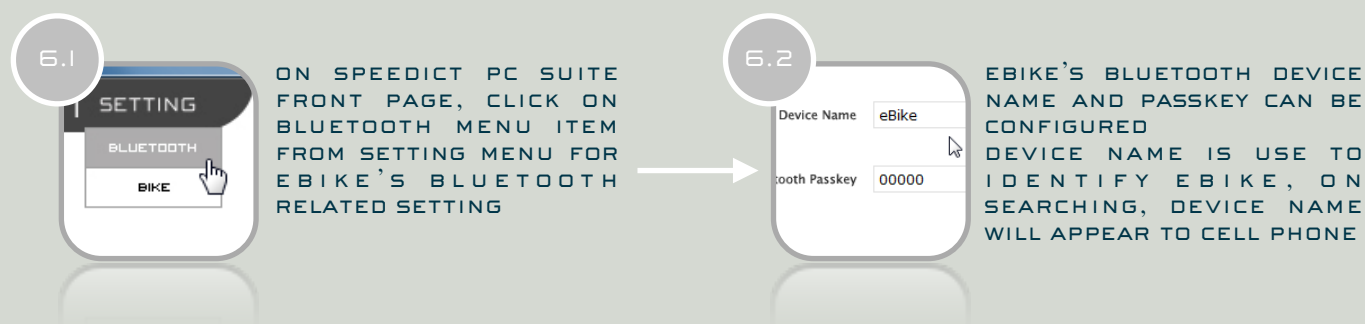
STEP 4. VIEW DATA CHART

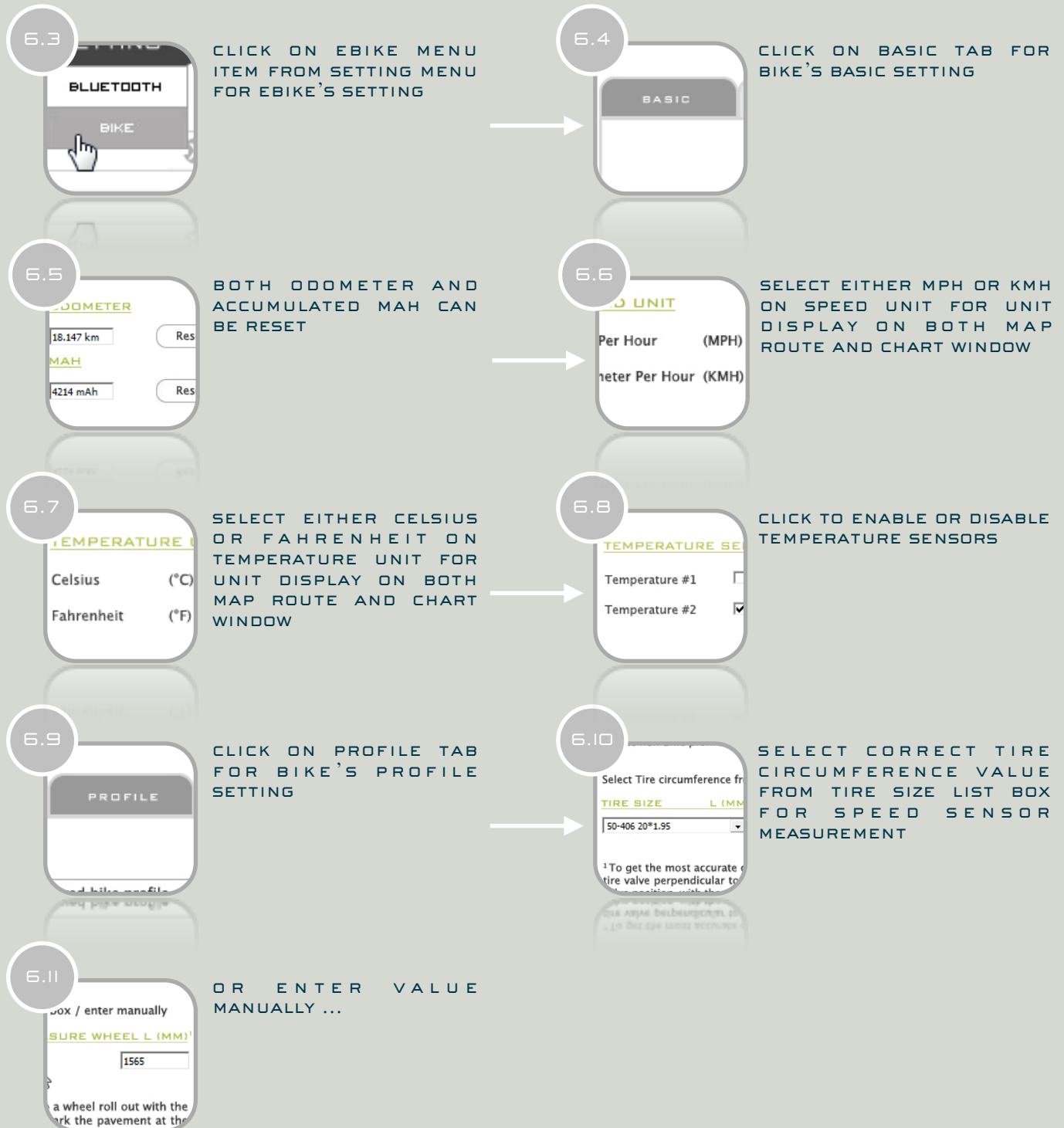


STEP 5. EDIT / DELETE RECORD

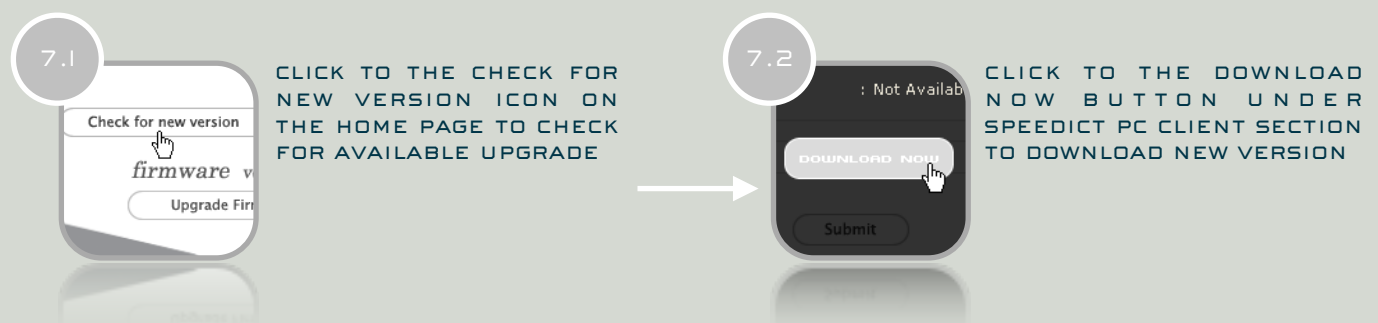


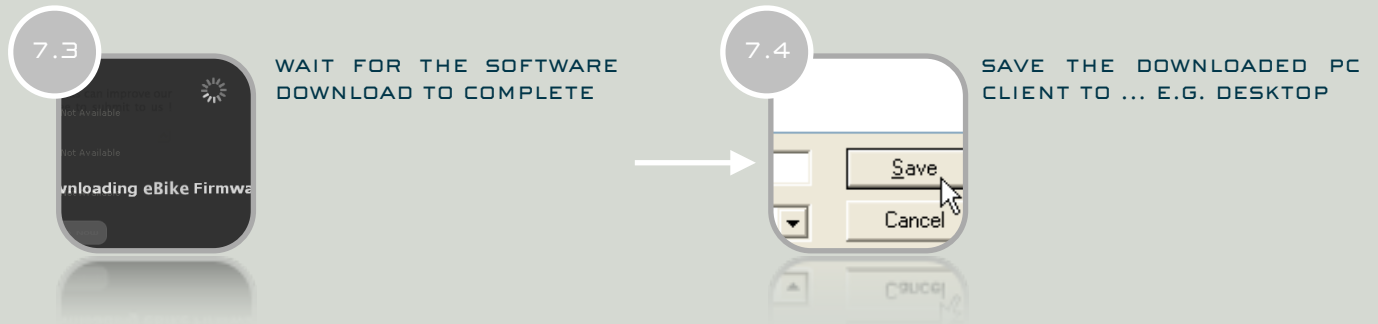
STEP 6. CHANGE DEVICE SETTING



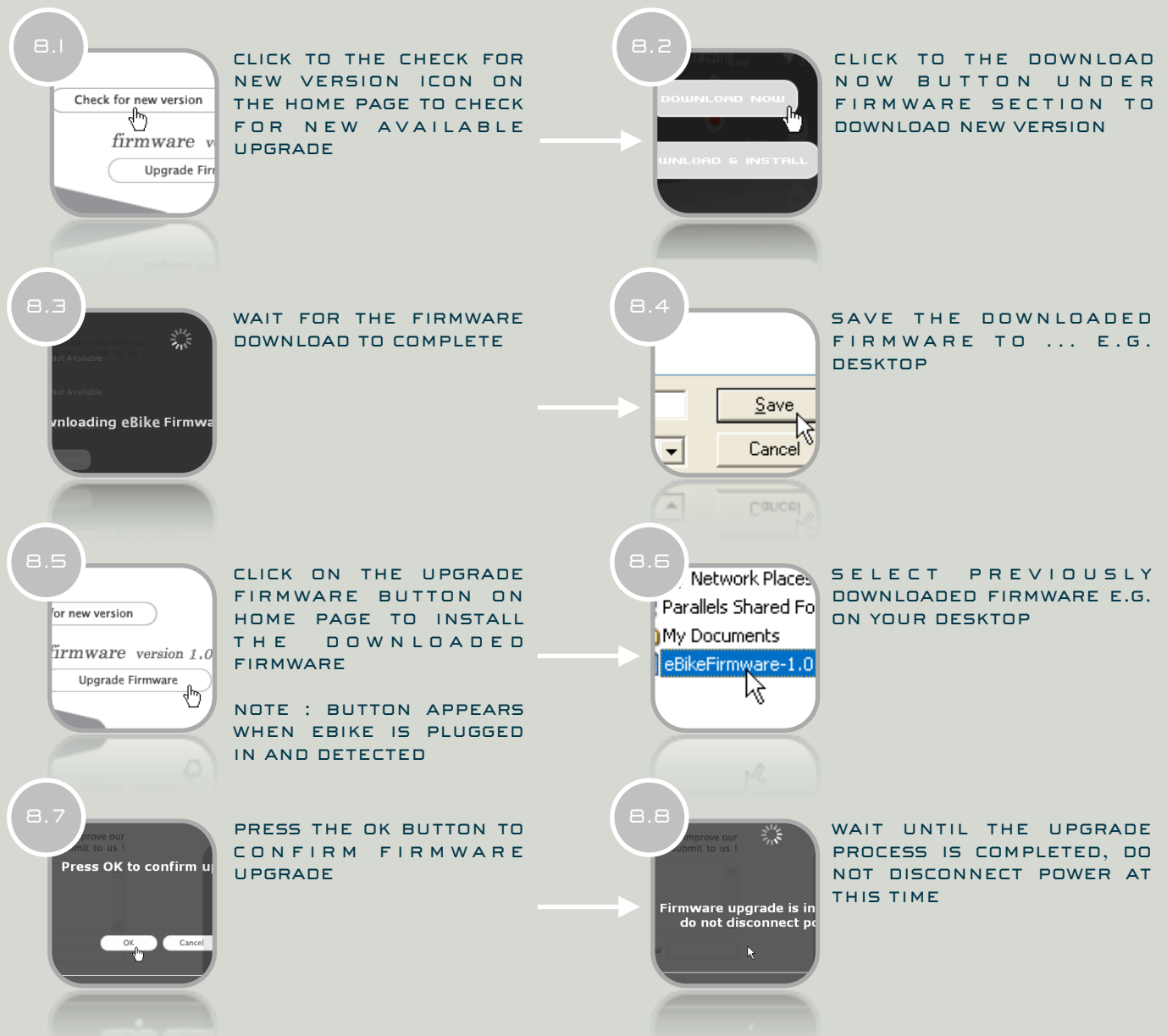


STEP 7. PC CLIENT UPGRADE

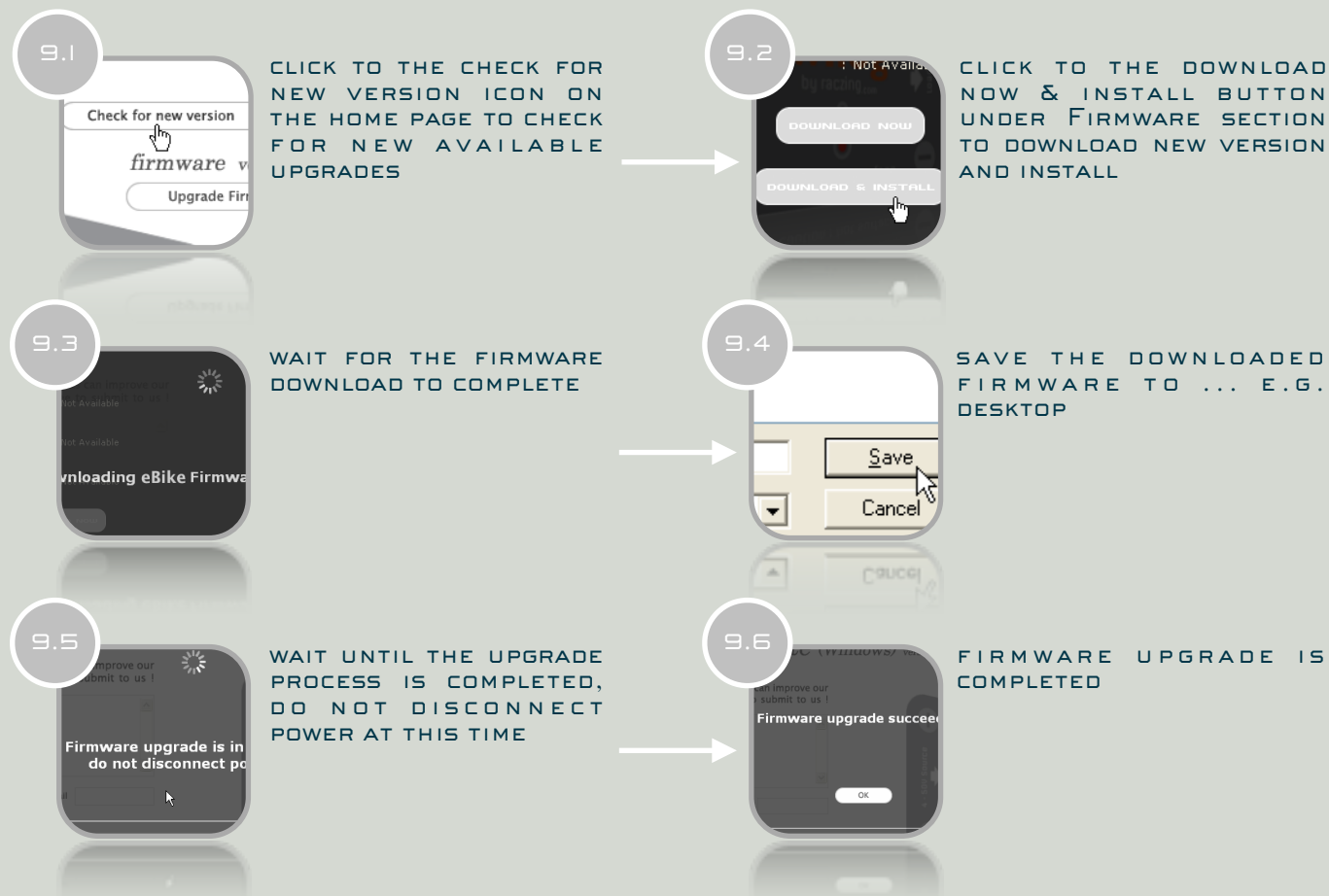




STEP 8. FIRMWARE UPGRADE (MANUAL)



STEP 9. FIRMWARE UPGRADE (AUTOMATIC)



CARING INSTRUCTION THE eBIKE CONTAINS NO USER SERVICEABLE PARTS INSIDE. IT DOES NOT REQUIRE SPECIAL CARE, JUST GENTLE WIPE THE eBIKE WITH A DAMP CLOTH IF IT GETS DIRTY AND IT CAN BE STORED ANYWHERE OTHER THAN AN EXTREME ENVIRONMENT OR UNDER DIRECT SUNLIGHT FOR A PROLONGED PERIOD OF TIME.

TECHNICAL SUPPORT PLEASE VISIT OUR SITE WWW.SPEEDICT.COM OR EMAIL US AT SUPPORT@SPEEDICT.COM FOR MORE TECHNICAL SUPPORT IF YOU ARE STILL HAVING DIFFICULTIES OR HAVE QUESTIONS THAT AREN'T COVERED IN THIS MANUAL.

WARRANTY THE eBIKE IS GUARANTEED TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR STARTING FROM THE DATE OF YOUR ORIGINAL PURCHASE. PLEASE REFER TO THE SPEEDICT PRODUCT WARRANTY PAGE FOR DETAILED TERMS AND CONDITIONS AS WELL AS PROCEDURES FOR WARRANTY CLAIMS.

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